Notice of RCRA Class 1 Permit Modification in Accordance with 20 NMAC 4.1.900 (40 CFR Part 270)

Waste Isolation Pilot Plant
Carlsbad, New Mexico

January 7, 2000

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Consistent with requirements of 20 New Mexico Administrative Code (NMAC) 4.1.900 (hereafter referred to as Part 270 or Section 270.XX) the U.S. Department of Energy, Carlsbad Area Office is submitting to the New Mexico Environment Department (NMED) a notice of Class 1 modifications to the Hazardous Waste Facility Permit (#NM4890139088-TSDF) for the Waste Isolation Pilot Plant (WIPP). Specifically, this information is provided to comply with the requirements of Section 270.42(a)(i).

The modifications are listed in Table 1. Listed information includes a reference to the applicable section of the permit, a brief description of each item, and the class of the item, as identified in Appendix I to Section 270.42. The relevant permit modification category, as identified in Appendix I, is provided as well. A more complete description of the class 1 modifications are provided in Attachment 1.

The identified changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment and the modified permit is no less stringent than the current permit.

Table 1. Class 1 Hazardous Waste Facility Permit Modification

No.	Affected Permit Section	Item	Category	Attachment 1 Page #
1	B-3d(1)	Clarify the application of visual examination to newly generated waste as opposed to its application to retrievably stored.	A.1	A-1
2	B3, Tables B3-7 and B3-8	Clarify the use of QA/QC Samples for Metals Analysis for Solid Samples	A.1	A-4

Attachment 1

Descriptions of the Hazardous Waste Facility Class 1 Permit Modifications

Item 1
Class 1 Permit Modification to Clarify Visual Examination

Description:
Clarify the difference between the use of visual examination for newly generated waste and its use for retrievably stored waste in conjunction with (or in lieu of) radiography as indicated by Table B-6.

Basis:
This change eliminates a potential source of confusion regarding three different applications of the same waste characterization technique.

Discussion:
In the permit, visual examination (VE) is used in three contexts. First, VE is portrayed as a primary characterization method for 100% of newly generated waste. This is found in Section B-3c:

> ... For newly generated waste, physical form and prohibited items will be verified during packaging (using the VE technique). ...

Again, Section B-3d(1), states:

> Verification that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream is accomplished during packaging (using the VE technique). This process consists of the operator confirming that the waste is assigned to a waste stream that has the correct Summary Category Group for the waste being packaged. If a confirmation cannot be made, corrective actions will be taken as specified in Permit Attachment B3. A second operator, who is equally trained to the requirements stipulated in Permit Attachment B1, will provide additional verification by reviewing the contents of the waste container to ensure correct reporting.

In addition, Table B-6 mandates that the physical form of the newly generated waste be verified through “documentation and verification” . Documentation is accomplished by the VE operator noting on a standard form what is placed in the container at the time the waste is generated. Verification is accomplished by a second equally trained operator verifying the determinations made by the first operator. Documentation and verification for newly generated waste does not require the additional creation of a video/audio tape.

The second context in the Permit for the use of VE is as a technique to be used on retrievably stored waste in lieu of 100% radiography to verify and confirm certain acceptable knowledge. When using VE in lieu of radiography, for retrievably stored waste, the production of a video/audio tape is mandated by the permit in Attachment B1-3b(3).

Even though the context of this statement is under the description of VE as a Quality Control (QC) check for radiography, the introductory paragraph to the section makes it clear that the requirement for video/audio also applies to VE in lieu of radiography.

The third context in the permit for the use of VE is as a technique to perform a QC check on radiography results. According to Table B-6, radiography only applies to retrievably stored waste. Therefore, this requirement also only applies to retrievably stored waste. The frequency of VE is determined based on the miscertification rate.

Clarifying language is necessary in Attachment B-3d(1) to indicate that when VE is used for newly generated waste, a video/audio tape is not required. Instead, the necessary QC is provided by the services of a second operator.

The item above is a Class 1 permit modification under Section 270.42, Appendix I, A.1. This change to the permit is most appropriately classified as an administrative and informational change. The item merely clarifies the permit and neither substantially alters the permit conditions nor reduces the capacity of the facility to protect the human health and the environment.

Revised Permit Text:

A. Attachment B-3d(1)

> The RCRA-regulated constituents in newly generated wastes will be documented and verified at the time of generation based on acceptable knowledge for the waste stream. Newly generated TRU mixed waste characterization will begin with verification that processes generating the waste have operated within established written procedures. Waste containers ~~will then be~~ are delineated into waste streams using acceptable knowledge. Verification that the physical form of the waste (Summary Category Group) corresponds to the physical form of the assigned waste stream is accomplished during packaging (using the VE technique). This process is different than the process described in Attachment B1-3b(3) and consists of the operator confirming that the waste is assigned to a waste stream that has the correct Summary Category Group for the waste being packaged. If a confirmation cannot be made, corrective actions will be taken as specified in Permit Attachment B3. ~~A~~ Instead of using a video/audio tape as required with VE in support of radiography in Attachment B1-3b(3), the VE technique for newly generated waste (or repackaged retrievably stored waste) uses a second operator, who is equally trained to the requirements stipulated in Permit Attachment B1, ~~will~~ to provide additional verification by reviewing the contents of the waste container to ensure correct reporting. If the second operator cannot provide concurrence, corrective actions will be taken as specified in Permit Attachment B3. The subsequent waste characterization activities depend on the assigned Summary Category Group, since waste within the Homogeneous Solids and Soils/Gravel Summary Category Groups will be characterized using different techniques than the waste in the Debris Waste Summary Category Group.

B. Attachment B4-3d

Acceptable knowledge characterization results shall be confirmed for both retrievably stored and newly generated waste. All retrievably stored waste shall be characterized using radiography or visual examination to confirm the Waste Matrix Code and waste stream and certify compliance with the WAP (Permit Attachment B). If a site must repackage its retrievably stored waste, then visual examination of the waste during repackaging using the VE technique or VE in lieu of radiography shall be used to confirm acceptable knowledge information rather than radiography.

Item 2
QA/QC Samples for Metals Analysis for Solid Samples

Description:

1) Revise the acceptance criteria for the metal laboratory control samples (LCS) for solid analysis in Table B3-9 to reference the precision and accuracy ranges in Table B3-8.
2) Revise footnote "b" in Table B3-8 to eliminate reference to the PDP blind audit samples.
3) Revise the corrective action for matrix spike duplicates to include values below the range specified in Table B3-8 as well as values above the range.

Basis:

1) The Permit is inconsistent with the way it requires the accuracy limits for metal LCSs for solid analysis to be applied. Footnote "b" regarding the use of statistically established control limits for laboratory control samples on Table B3-8 conflicts with the acceptance criteria requirements for laboratory control samples in Table B3-9.
2) The Permit is inconsistent with the way it requires the accuracy limits for the blind audit samples to be handled. Footnote "b" regarding the use of the accuracy limits in Table B3-8 conflicts with the acceptance criteria for blind audit samples in Table B3-9.
3) The corrective action for matrix spike duplicates incorrectly refers to %Rs > values listed in Table B3-8. The %Rs listed in Table B3-8 are a range and the corrective action for matrix spike duplicates should indicate outside the range like the corrective action for matrix spikes.

Discussion:

Table B3-8, footnote "b" states:

> "Applies to laboratory control samples, laboratory matrix spikes, and PDP blind audit samples. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements."

This footnote follows the SW-846 recommendation that laboratories establish their own statistically-based control limits and use them for evaluating performance. However, the acceptance criteria for LCSs in Table B3-9 states:

> "80 - 120 %Rs"

The acceptance criteria require that the laboratory meet "80 - 120 %Rs" in lieu of the established statistical control limits as recommended by SW-846 and allowed by Table B3-9. The LCS acceptance criteria in Table B3-9 should be changed to be consistent with

the footnote on Table B3-8 and SW-846 recommendations.

The footnote also states that the accuracy ranges in Table B3-8 are applicable to “PDP blind audit samples.” The blind audit samples section of Table B3-9 references the PDP audit plan for the acceptance criteria. The PDP audit plan includes allowable accuracy ranges for metals. In addition, tables B3-4 and B3-6 for VOCs and SVOCs respectively, only reference the PDP audit plan for blind audit samples. Therefore, the reference to PDP audit samples in Table B3-8, footnote “b” should be removed.

The Table B3-9 corrective action for matrix spike duplicates incorrectly refers to %Rs > values listed in Table B3-8. The %Rs listed in Table B3-8 are a range and the corrective action for matrix spike duplicates should indicate outside the range, because values below the range represent a condition that requires corrective action. In addition, the corrective action for matrix spikes for metals refers to “outside the range,” which includes values below the range in Table B3-8. Therefore, the corrective action for matrix spike duplicates should be modified to “outside the specified range.”

The item above is a Class 1 permit modification under Section 270.42, Appendix I, A.1. This change to the permit is most appropriately classified as an administrative and informational change. The item merely clarifies the permit and neither substantially alters the permit conditions nor reduces the capacity of the facility to protect the human health and the environment.

Revised Permit Text:

TABLE B3-8
METALS TARGET ANALYTE LIST
AND QUALITY ASSURANCE OBJECTIVES

Analyte	CAS Number	Precision (%RSD or RPD)[a]	Accuracy (%R)[b]	PRDL[d] (Fg/L)	PRQL[c] (mg/kg)	Completeness (%)
Antimony	7440-36-0	#30	80-120	100	100	90
Arsenic	7440-38-2	#30	80-120	100	100	90
Barium	7440-39-3	#30	80-120	2000	2000	90
Beryllium	7440-41-7	#30	80-120	100	100	90
Cadmium	7440-43-9	#30	80-120	20	20	90
Chromium	7440-47-3	#30	80-120	100	100	90
Lead	7439-92-1	#30	80-120	100	100	90
Mercury	7439-97-6	#30	80-120	4.0	4.0	90
Nickel	7440-02-0	#30	80-120	100	100	90
Selenium	7782-49-2	#30	80-120	20	20	90
Silver	7440-22-4	#30	80-120	100	100	90
Thallium	7440-28-0	#30	80-120	100	100	90
Vanadium	7440-62-2	#30	80-120	100	100	90
Zinc	7440-66-6	#30	80-120	100	100	90

[a] # 30 percent control limits apply when sample and duplicate concentrations are $ 10 x IDL for ICP-AES and AA techniques, and $ 100 x IDL for Inductively Coupled Plasma—Mass Spectrometry (ICP-MS) techniques. If less than these limits, the absolute difference between the two values shall be less than or equal to the PRQL.

[b] Applies to laboratory control samples~~,~~ and laboratory matrix spikes~~, and PDP blind audit samples~~. If a solid laboratory control sample material which has established statistical control limits is used, then the established control limits for that material should be used for accuracy requirements.

[c] TCLP PRQL values are reported in units of mg/l and limits are reduced by a factor of 20.

[d] PRDL set such that it is a factor of 10 below the PRQL for 100 percent solid samples, assuming a 100x dilution during digestion.

CAS = Chemical Abstract Service
%RSD = Percent relative standard deviation
RPD = Relative percent difference
%R = Percent recovery
PRDL = Program required detection limit (i.e., maximum permissible value for IDL) (milligrams per liter)
PRQL = Program required quantitation limit (milligrams per kilogram)

TABLE B3-9
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR METALS ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-8 QAOs	Repeat until acceptable
Laboratory blanks	One (1) per analytical batch	# 3 x IDL (# 5 x IDL for ICP-MS)[b]	Redigest and reanalyze any samples with analyte concentrations which are #10 x blank value and $ 0.5 x PRQL
Matrix spikes	One (1) per analytical batch	Meet Table B3-8 accuracy QAOs	Nonconformance if %R outside the range specified in Table B3-8
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-8 accuracy and precision QAOs	Nonconformance if RPDs and ~~%Rs > values~~ outside the range specified in Table B3-8
ICP-MS Tune (ICP-MS Only)	Daily	4 Replicate %RSD # 5; mass calibration within 0.9 amu; resolution < 1.0 amu full width at 10% peak height	Nonconformance if %RSD > 5; mass calibration > 0.9 amu; resolution > 1.0 amu
Initial Calibration 1 blank, 1 standard (ICP, ICP-MS) 3 standard, 1 blank (GFAA, FLAA) 5 standard, 1 blank (CVAA, HGAA)	Daily	90-110 %R (80-120% for CVAA, GFAA, HGAA, FLAA) for initial calibration verification solution. Regression coefficient $ 0.995 for FLAA, CVA, GFAA, MAA	Correct problem and recalibrate; repeat initial calibration
Continuing Calibration	Every 10 samples and beginning and end of run	90-110% for continuing calibration verification solution. (80-120% for CVAA, GFAA, HGAA, FLAA)	Correct problem and recalibrate; rerun last 10 samples
Internal Standard Area Verification (ICP-MS)	Every Sample	Meet SW-846 Method 6020 criteria	Nonconformance if not reanalyzed at 5 X dilution until criteria are met

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action[a]
Serial Dilution (ICP, ICP-MS)	One (1) per analytical batch	5 X dilution must be #10% D of initial value for sample > 50xIDL	Flag Data if >10% and > 50xIDL
Interference Correction Verification (ICP, ICP-MS)	Beginning and end of run or every 12 hours (8 for ICP) whichever is more frequent	80-120% recovery for analytes Note: Acceptance Criteria and Corrective Action apply only if interferents found in samples at levels greater than ICS A Solution	Correct problem and recalibrate, nonconformance if not corrected
Laboratory Control Samples	One (1) per analytical batch	~~80 - 120 %Rs~~ Table B3-8 accuracy QAOs	Redigest and reanalyze for affected analytes; non conformance if not reanalyzed
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

[a] Corrective action per section B3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.
[b] Applies only to concentrations greater than the PRQLs listed in Table B3-8.

IDL = Instrument Detection Limit
PDP = Performance Demonstration Program
PRQL = Program Required Quantitation Limit
%R = Percent Recovery
RPD = Relative Percent Difference